

REMARKS

Claims 1-41 are pending in this application. Claims 1, 23, 26, 28, 32, 40, and 41 have been amended, and Claim 27 has been canceled.

The Applicants express with appreciation the notice of allowable subject matter in Claim 27. The Examiner stated that Claim 27 would be allowable if it were “rewritten in independent form including all of the limitations of the base claim.” The Applicant has amended Claim 26 to include the subject matter recited in Claim 27 and requests that the Examiner place Claim 26 in condition for allowance.

A brief description of some of the claimed inventions is provided. Many of the claimed inventions pertain to methods and apparatuses for iterative decoding methods and apparatuses to decode packets or frames of data in a communication system. Many of the claimed inventions are used in a communication system that has a time constraint per frame, *e.g.*, a preferred time period within which a data packet or frame should be decoded. Some frames or packets are uncorrupted, requiring less time and iterations to decode, while others are corrupted, requiring more time and iterations to decode. Communication systems of the art employed fixed time decoders that decoded a frame for a fixed period of time, regardless of whether the frame was uncorrupted or corrupted. This resulted in too much time and iterations being spent to decode uncorrupted frames, resulting in wasted processing power; or, too little time to decode corrupted frames, resulting in improperly decoded frames.

Many of the claimed inventions decode a frame in a shorter time than the time constraint of the system, for example if the frame was uncorrupted, while decoding others in a longer time than the time constraint of the system, for example if the frame was corrupted. Some of the claimed inventions employ an error check to determine whether the frame is corrupted or not and to determine how many iterations and how much time is used for decoding. In this manner,

communication systems that employ a fixed data rate decoder, *e.g.*, a decoder that can only decode a certain number of bits in a given time period, can properly decode uncorrupted and corrupted frames in an average time that is less than or equal to the system's time constraint. As explained above, this is accomplished by decoding uncorrupted frames in a shorter time than the system's time constraint and corrupted frames in a longer time than the system's time constraint.

The Examiner rejected Claims 1-10 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,108,372 by Tidemann Jr. (hereinafter "Tidemann"). The Applicants traverse this rejection.

Tidemann discloses a communication system that employs variable rate encoders, channels, and decoders. In particular, the variable rate encoders encode a data packet having a fixed time period at different rates depending on how much data, *e.g.*, audio voice or speech, the packet is to carry in the fixed time period. (4:39-54.) For example, each data packet is about 20ms long, and depending on the amount of data provided, a high or low data rate (*e.g.*, 8,500 or 800 bits per second, respectively) is used to encode a data packet. (4:14-41.) The length in time of each packet, however, remains the same. *Id.* These packets are referred to as variable data rate packets that have the same time length but a different number of bits. The variable data rate packets are sent to a receiver over a variable rate channel.

The receiver must then decode each packet at a decoding data rate that is based on the data rate at which the packet was encoded. (5:4-6 and 6:1-3.) To do this, the receiver must determine the data rate of each packet, and Tidemann discloses using a Hypothesis test to predict the data rates. (5:4-6 and 5:32-37.) The decoder within the receiver then decodes each packet in a fixed time period at the data decoding rate predicted by the Hypothesis test. (5:60-6:3.) An error check is then performed to determine if the correct data decoding rate was predicted, and if

has been amended to incorporate the limitations of Claim 27, which the Examiner indicated would be allowable if rewritten in independent form.

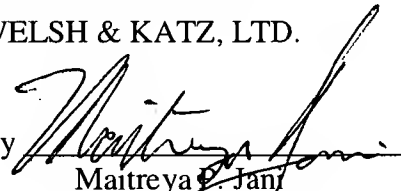
The Applicants traverse the objections and rejections made by the Examiner and submit that Claims 1-26 and 28-41 are in condition for allowance. The Applicants request the Examiner to remove the stated objections and rejections and issue a Notice of Allowance for Claims 1-26 and 28-41.

If the examiner finds that there are any outstanding issues which may be resolved by a telephone interview, the Examiner is invited to contact the undersigned at the below listed number. The Examiner is authorized to charge Deposit Account No. 23-0920 to cover any shortage of fees and requested to charge said charge account in the event that there has been an overpayment.

Respectfully submitted,

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By



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September 29, 2005

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